Coal in Donets Basin

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1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892
1414	1495	1740	1758	1665	1883	2110	2060	2500	3110	3000	3140	3570
1285	1400	1400	1600	1665	1800	1990	2050	2420	2480	2470	2600	2890
3300	3500	3800	3900	3900	4300	4600	4600	5400	6200	6000	6200	7000
43	42,5	46	45	42,5	44	46	45	46,5	50	50	50,5	51

1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
11.6	13	12,9	14,2	18,2	17,9	17.7	16,7	19.9	21,4	25,3	27,6	26,6
4,8	4,8	3,6	4,6	5,4	5,6	5,7	5,5	5,8	6,4	6,9	3,8	—
17.9	19.6	18,7	21,7	26	25.9	26	24.9	28.4	31,1	36	35.6	30,9
65	66,5	69	65,5	70	69	68	67	70	69	70	78	86

1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937
11.8	12.5	19,6	24,6	27,3	31	36,5	40,9	44	51	61,4	69,6	77,5	77,5
1	1	1,8	2,6	2,6	3	3,6	5,5	7,3	9,2	11,6	14,1	17,3	17,8
16,3	16,5	25,8	32.3	35.5	40	47,8	56,8	64,4	76,3	93,6	109	126	128
72,5	76	76	76	77	77,5	76,5	72	68,5	67	65,5	64	61,5	60,5

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The largest centers of production in the Donets Basin are Stalino, Makijivka, Kramatorska, Voroshylivhrad, Horlivka, Konstantynivka, Artemivske (Bakhmut), Slovianske etc. Mariupil is the exporting harbor.

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At the Dnipro Bend there are, among others, plants for best quality steel, ship-building yards, electro-technical factories and largescale chemical works. The gigantic power-station at Dnipropetrivske has a capacity of 558 000 KW. The main centers of production are Dnipropetrivske, Zaporizha, Dniprodshershinske, Kryvyj Rih and Nikopil. The exporting harbors are Mykolajiv and, for some products, Kherson.

The Donets Basin and the Dnipro Bend are frequently combined to-day and represent a many-sided economy on a wide basis of raw materials and power. As a combine it is contrasted with the Ural-Kusnetsk Combine (above all as regards coal and iron). Kerch with its ore mines and heavy industry gravitates towards the Donets Combine.

6. Production of Electricity, Brown Coal and Peat

●377 In the production of electric current Ukraine has not made much progress. The figure for 1932 was 2800 million KWh (Germany 23460 mill. KWh, Italy 10230 million KWh, Switzerland 4800 million KWh, Belgium 3800 million KWh). Of the total current produced in Ukraine, 2045 mill. KWh were contributed by Dnipro-Ukraine, 474 million by North Caucasia, 211 million by Western Ukraine. 80 % of the electric current in Dnipro-Ukraine is generated by coal (⅛ by coal dust), 15 % by petroleum and only 5.5 % by water-power.

In the period from 1927—1933 the great hydro-electric plant was constructed at Dnipropetrovske (Dniprelstan, Russian Dnjeprostroj) with a capacity of 558000 KW; at the time it was the second largest hydro-electric plant in the world and was built by American engineers. It is a great feat of engineering. And yet scarcely 8 % of the available water-power has been exploited. The plant is of importance for shipping (in overcoming rapids in the river) and for the irrigation of arid areas, but also for industry. All manner of factories have sprung up round it — for the production of pig-iron, best-quality steel, metal and manganese alloys, aluminium, then chemical factories for sulfates, synthetic ammonia, soda etc.

316 The mining of brown coal started in the middle of the 19th century and produced from 1902—11 an annual average of 41000 t. This figure sank rapidly after World War I. The industry began in the district round Kyiv as a result of the erection of sugar factories and it also supplied several agricultural machinery plants, but it could not hold its own in competition with Donets coal. After World War I, the production of brown coal was systematically promoted and in 1934 had reached 0.3 million t. It is used by power plants and for the manufacture of briquettes. A start has been made to produce benzine by hydro-genetic processes.

The production of peat has also grown from modest beginnings (annual production before 1914 only 23000 t) to a considerable figure (1.1 million t in 1935). It is confined practically to Dnipro-Ukraine. It is utilised mainly by the agricultural indu-

4: Allen H-4 (no date) 1941 RD1 Ukraine RD1

(Mariupol); 'The Russian Providence' (near Mariupol); 'The Kerch' (near Kerch). In the 'Western' (Dniepr) group the principal works were: 'The Gdantsev' (Krivoy Rog); 'The Dniepr' (near Ekaterinoslav); 'The Alexandrovsky' (near Alexandrovsk). Almost all these works have continued to function under the Soviets; during the course of the last twenty years some have been considerably enlarged and others modernized. Some have been renamed: e.g. 'Alexandrovsky', now 'Zaporogian Steel'; 'Gdantsev', 'Krivoy Rog'; 'Russian Providence', 'Azov Steel'. These three, particularly, have become very important plants.

The Ukrainian and New Russian metallurgical industry comprises 45 blast furnaces and 118 open-hearth furnaces. In the twenty-five years between 1913 and 1938 the output of pig iron has been expanded from 3 million to nearly 8 million tons; rolled iron from 1 million to 3 million; steel from 2 to 5 million tons. Thus, the metallurgical industry of Ukraine and New Russia (excluding the rest of U.S.S.R.) ranks fourth in world production of pig iron (after U.S., Germany and Great Britain) and fifth in the production of steel and rolled iron (after U.S., Germany, Britain and France). In 1938 the Ukrainian and New Russian industries produced 55 per cent of all Russian pig iron, 35 per cent of all steel and 25 per cent of all rolled iron. Concentrated within a comparatively limited region the heavy industry of New Russia and the Ukraine constitutes the most highly developed industrial area of the Soviet Union.

The Revolutionary régime was fortunate in inheriting a wide area of industrialization which, in the immediate pre-Revolutionary period, had been expensively equipped with modern plants by West European capitalist groups. The régime cannot be considered to have achieved anything remarkable in further development, and had the capitalist system of promotion been allowed to survive it is probable that progress would have been more rapid.

The most spectacular (and widely advertised) achievement of the Soviet régime in the Ukraine has been the construction of the grandiose hydro-electric plant in the neighbourhood of the rapids of the Dniepr (Dnieprostroy). A new source of energy (about 600,000 kilowatts), equivalent to a third of the electric energy produced in the Ukraine, has been made available for industry. Dnieprostroy may, however, be considered as a somewhat redundant reinforcement of the power sources of the country which could only have been undertaken by a régime which was not hampered by considerations of productive yield on capital investment. In view of the vast deposits of coal and anthracite to hand and of the as yet unexplored reserves of lignite, the development of a new source of

4: Allen H-4 (no date) 1941 RD1 Ukraine RD1

377 energy was not of urgent importance. Dnieprostroy supplies neighbouring towns and industrial plants with light and power (including the new 'Dniepr Electrical-Metallurgical Works' and the 'Dniepr Aluminium Works'), but the electrification of the railways of Soviet Ukraine has not yet been undertaken, nor does this appear necessary in view of the cheap supplies of fuel locally available.

397 392 103 As for machine and other mechanical works, there were in existence before 1916: 'Hartmann's Locomotive Works' at Lugansk; the more modern 'Kharkov Locomotive Works' and 'The Electro-Mechanical Works', also at Kharkov; and a series of smaller machine works (particularly for the manufacture of agricultural machinery) at Sumy, Alexandrovsk, Berdyansk, Odessa and Kiev. The Soviet Government considerably enlarged the 'Lugansk Locomotive Works', and recently machine and locomotive works have been in process of construction and subsequent enlargement at Kramatorskaya (in the Donets region). New 'Tractors' Construction Works' have been built in Kharkov. Machinery plants have been founded in Berdyansk and Cherkassy; the old Kiev and Alexandrovsk works have been enlarged; and new agricultural machinery works have been built in Elizavetgrad, Melitopol and Kherson. The shipbuilding works in Nikolaev continue to supply the Black Sea fleet as before the Revolution. There, during the last war, ships were in construction for the Imperial Navy; armour-plate being manufactured in the 'Nikopol-Mariupol Works'.

381 Some progress has been made in the development of a chemical industry based on the abundant supplies of coal in Donbass. There are chemical processing plants at Slavyansk and Lisichansk, and near the railway stations of Gorlovka and Konstantinovka. The industry is still in the experimental stage, but Soviet 'Plans' envisage the supply of 30 per cent of the needs of the home market.

433 The Soviet emphasis on the development of Ukrainian heavy industry and a parallel neglect of the possible expansion of light industries has produced a badly balanced economy in Soviet Ukraine and the country remains dependent on other and often distant parts of the Union for the satisfaction of many of the needs of the people. Political considerations which aim at establishing the complete interdependence of the various parts of the Union are at the basis of the particular direction of the Five Year Plans in the Ukraine. The emigré Ukrainian economist, V. Sadovsky, writes: 'In 1934, 69·4 per cent of industry went to the production of materials and of the tools of production, and only 34·6 per cent for general needs. In this sense the relations existing in 1913 were

7:Bregy & Obolensky H-4, 5 (no date) 1940 RD1 Ukraine RD1

spot and leaves the country in the form of special steels, of sheet-iron, of all sorts of machines and tools, as well as of chemical products.

The two mining regions and the regions of Dniepropetrovsk possess forty-five furnaces having a volume of 25,000,000 cubic metres and more than 110 Martin ovens. Russian industry still depends to-day in great measure on the factories of the Ukraine.

As we have seen, the state of industry in the Ukraine, especially of heavy industry, is conditioned by the geographical position of its raw materials and of the sources of energy. All the metal is concentrated at Krivoi-Rog and the source of energy is represented in the first instance by the coal of the Donietz.

The peat bogs dispersed over the whole territory and whose extent does not exceed 400,000 hectares and the production 500,000 tons, and the brown coals the extraction of which is only 300,000 tons, can enter into the calculation only as auxiliary fuel of a definitely local importance.

The Ukraine, on the contrary, is well supplied with hydro-electric plant. This energy is mainly given by the station of *Dnieprogues*, better known under the name of '*Dnieprostroi*,' which means 'Construction on the Dnieper.' This name was especially valuabie during the building of the station which, having been finished, has taken the name of '*Dnieprogues*,' an abbreviation of '*Dnieprovskaia Guidro-Electritcheskaia Stantsia*,' which means 'hydro-electric station on the Dnieper.' Built by the Soviets on the rapids of this river, it employs the energy and the power which reach 600,000 kwh.

In the other regions of the Ukraine the network of hydro-electric stations is relatively poor, as the rivers do not provide the necessary resources in this respect. The existing stations serve the mills, the oil mills, the sugar refineries, or the town stations of small power.

377 The functioning of the *Dnieprogues* station, which could open enormous possibilities of development of all kinds of industries and of the electrification of the railways, has nevertheless, despite its enormous power, failed to change the industrial geography of the Ukraine because it is just half-way between the Donietz basin and Krivoi-Rog and thus does not bring about any alteration in the distribution of the sources of energy.

438 Thus the heavy industry of the Ukraine remains, in its greater part, concentrated around this region, round Nikopol and along the northern edge of the Donietz basin.

325 Kharkov and its surroundings are the greatest metallurgical centres of the Ukraine. There great factories of turbines, of generators, of electrical machines, of tractors, of locomotives, of railway trucks, and of factory equipment, etc., are to be found.

327 The production of sheet-iron and of steel rails, tubes, plates, beams, wire, etc., is distributed among many factories of the Donietz basin, at Nikopol and at Dniepropetrovsk.

Zaporojie (not far from Krivoi-Rog and near the *Dnieprogues*) produces nearly 60 per cent of the special steels of the Union. The Soviets intend to create a new powerful centre of metal industry there.

391 Apart from Kharkov, factories producing all the
392 heavier machines such as locomotives are to be found in the Donbass (abbreviation of Donietz basin which we will now use), at Lougansk, and at Kramatorski, where an enormous newly constructed factory is one of the largest in the world.

402 The equipment for the light industry—the mills, wine-presses, oil mills and elevators—is chiefly manufactured at Berdiansk (Donbass), Melitopol (Northern Taurida), Tcherkassy (centre), Kiev, and Odessa.

392 Agricultural machinery comes from the factories of

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464 The number of workers and employees in the national economy of the
874 U.S.S.R. increased by 3 million. Vocational schools and factory training centres graduated thousands of skilled workers, and improved the skill of several millions already employed.

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727 Of the districts which suffered occupation, economic rehabilitation
433 as well as capital construction amounting to 17,500 million roubles in
652 1946 made it possible to increase their industrial output by 28 per cent. as compared with 1945. Pravda writes - "the factories, mills, pits, power stations, towns and villages which were destroyed by the enemy are being revived one by one...."[1]

In the Ukraine

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727 The Ukraine has been likened to one big building site, where more
433 than 500,000 workers are engaged in restoring industrial plants and
327 municipal buildings.[2] In the Donets Basin, the coal output of 1946 was 30 per cent. higher than that of 1945. In the Ukrainian iron and steel industry, 21 blast furnaces, 58 steel-smelting furnaces, 60 metal and pipe-rolling mills, and 71 coke batteries were at work by January 1947. Of 104 machine-building factories to be restored, 102 were already producing goods, and mastering the production of improved types of machinery. The Kharkov transport machine-building works was preparing to build long-distance steam engines; and the tractor works was increasing its production, as were many other factories.

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727 In 1946 the Kharkov turbo-generator works made a 100,000 kilowatt
433 turbine and one of 50,000 kilowatts. At Dniepropetrovsk, a lorry
393 factory was being built; and in Odessa and Lvov, automobile assembly
398 works were under construction. Great work was also being done in the development of light industry, food processing, chemical works, and other branches of industry.

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727 After three years' work of restoration the Dnieper Dam had been
433 rebuilt in the main, and the housing for the power station erected.
377 By the end of 1946 the capacity of Ukrainian power stations had reached 70 per cent. of pre-war.

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362 Since the liberation over 104.5 million square feet of floor space
368 had been restored in the Ukraine. Over half a million of the 590,000 houses destroyed by the Germans were restored or built anew in Ukrainian villages; and more than 13,000 cultural institutions in the villages and 118,000 auxiliary buildings on the farms.[2]

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1 Pravda, quoted by Soviet News, London, January 22, 1946

2 Soviet Monitor, London, January 23, 1947.

135 To the south-east, in the Don and northern Donets valleys,
654 geologists have discovered a number of new coal-bearing areas, and have confirmed that the Donets Basin coal layers stretch far to the east and south.

Other investigations of coal-bearing areas are to begin shortly, particularly around the Azov Sea coast and in other regions bordering the Donets Basin.

Coke

316 The coke output of the Ukrainian S.S.R. in 1950 is planned to be 15,500,000 tons.

Natural Gas and Oil

315 With the incorporation of Western Ukraine in 1939, the Ukrainian
185 S.S.R. came into possession of oil producing regions. The Five-Year Plan calls for the intensive development of these and other areas of the Ukraine for the increased production of oil and natural gas. Three hundred and twenty-five wells are to be located to add to the
[654] petroleum resources of the western regions; prospecting for commercial deposits of petroleum in the Rozny area is to be completed; and there is to be extensive geological exploration for natural gas in the Dragobych Region (Western Ukraine) and on the Azov and Black Sea coasts.

[382] The total output of petroleum in the Ukrainian S.S.R. in 1950 is fixed by the Five-Year Plan at 325,000 metric tons.

The plan also provides for the building of a gas pipeline from Dashava to Kiev. Already in process of construction, the first section of the pipeline will be completed this year (1947) and will supply gas to more than 30,000 flats and several large industrial plants in Kiev.

Electric Power Stations

377 Electrification has been one of the outstanding features of the Soviet economy. Before the war the Ukrainian Republic possessed a wide network of electric power stations. Best known was the huge Dnieper Dam and Lenin Hydro-electric Station, completed in 1932 near Zaporozhie. This station supplied electric power to a great industrial region: in the north the steel mills of Dniepropetrovsk and Dnieprodzerzhinsk, and to the south-east, the Nikopol manganese mines. These three industrial centres developed quickly after the Dnieper Dam was built; and the abundance of cheap power available from it also gave rise to the growth of a metal and machine-building centre at Zaporozhie.

727 In August 1941 the retreating Soviet army troops partially disabled
397 the Dnieper Dam and power station to prevent its falling into enemy hands. This destruction was later completed by the Germans. When the Soviet Army recaptured the region, they found that 35 of the dam's 48 piers had been blown up, and all the generators destroyed. Damage to the power house alone was estimated at 500,000,000 roubles.

Reconstruction work began in February 1944, when the war was still on. Three years later the assembly of the first power unit of 72,000 kilowatt capacity was completed; and on March 3, 1947, the Lenin Hydro-electric Station supplied its first post-war currency to the industry of the Dnieper Valley.

There are over 11,000 men and women engaged on the restoration job, which has involved repairing the dam and the underwater structures, building the housing for the power station, and mounting the machines. Another two power units are to be assembled later this year.

After the expulsion of the Germans from the Ukraine, the capacity of the Republic's power stations was only 0.4 per cent. of pre-war. By the end of August 1946 restored capacity had reached 47 per cent. In the Donets Basin 70 per cent. had been restored, and in the Stalino area, 79 per cent. In the city of Lvov (Western Ukraine) the pre-war capacity of its electric power stations had been surpassed by 18 per cent. In the first seven months of 1946 much had been accomplished: some 400 power stations, including 215 hydro-electric plants, had been launched in the Ukraine; and it was expected that 750 more power stations would be completed by the end of the year.

The Five-Year Plan fixes the 1950 output of electric power in the Ukraine at 13,690 million kilowatt hours. The total capcity of Ukrainian power stations is to be increased in 1946-50 by 2,57_,000 kilowatts. The Five-Year Plan directs that:-

"The Lenin Hydro-electric Station on the Dnieper shall be rebuilt. Small hydro-electric power plants with a total capacity of 203,000 kilowatts shall be built to meet the requirements of agriculture and local consumers. Plant aggregating 95,000 kilowatts shall be put into operation at municipal electric power stations."

The restoration of electric power facilities will assist greatly in rehabilitating other sections of the Soviet economy

Iron and Steel

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327 The Five-Year Plan for the Ukrainian S.S.R. envisages an output in
433 1950 of 9.7 million tons of pig iron, and 8.8 million tons of steel.

In order to accomplish this, the iron and steel plants of the Donets Basin and the Dnieper region are to be rehabilitated; and there are to be put into operation 30 blast furnaces with an aggregate annual capacity of 9 million tons of pig-iron, steel smelting units with a